Remarks

The Applicants would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter in this application.

Claims 10 and 11 are currently amended.

The drawings were objected to regarding the limitation in claim 10 that previously read "a projecting surface of the locking projection is a matrix metal face." By the present amendment, both of claims 10 and 11 have been amended to read "a ~~projecting~~ surface of the main body portion of the locking projection is a ~~matrix~~ metal face having conductivity." Thus, as shown in Figure 4, projection 35 includes a face surface having a conductive, metal face. The face surface of the projection 35 is in contact with an inner peripheral portion of the locking hole 31, so as to provide electrical conductivity therebetween. As a result, it is submitted that the drawings now show every feature of the invention specified in the claims. Withdrawal of the objection is respectfully requested.

Claims 1, 3, and 8-12 stand rejected as obvious in view of Spencer et al. (US Patent 4,609,801, hereinafter "Spencer"). For at least the following reasons, the Examiner's rejection is respectfully traversed.

Claim 1 remains as previously presented, including the limitations from cancelled claim 2. Thus, as admitted by the Examiner, Spencer does not describe, teach or suggest each and every limitation as required in claim 1. Specifically, Spencer does not disclose, teach or suggest that a second fold-to-bend portion has a locking hole and a

flange portion has a locking projection penetrate through the locking hole, as recited in claim 1.

Spencer merely discloses that a flange portion 96c of an inner member 88 has a plurality of equally spaced holes 104c, and a plurality of dimples 106c are pressed into the portion 102 of a front panel flange 96 which overlaps and captures the top panel flange 96c, directly over the spaced holes 104c (column 6, lines 3-8 and Fig. 11 of Spencer). Spencer also discloses a similar crimping connection technique used for flanges 96a and 96b extending along a front edge of side panels 52, 54 as is shown in Fig. 9. (column 6, lines 11-13 of Spencer). In Spencer, the flange 96c has holes 104c and the dimples 106c are pressed into the portion 102 (column 6, lines 3-5 of Spencer).

Moreover, according to the structure shown in Figure 9 of Spencer, a though-hole is formed in the end of the member 54 (corresponding to the flange) and the projection is formed on the member 98b (corresponding to the second-hold-to-bend portion). Thus, during assembly, the relative position between the projection and the hole cannot be confirmed from the outside by a user. Indeed, the hole is completely hidden from view, and the projection must be blindly assembled within the hole. Therefore, accurate positioning cannot be maintained, so that coupling failure may occur.

The inner box used in a microwave oven is subjected to cyclic heating and cooling stresses over a long period of time. Thus, reliable coupling is required. For example, if one coupling failure occurs at a position in the inner box, such uncoupling may increase into multiple coupling failures over time. As a result, undesirable microwave leakage can be caused.

Accordingly, by the instant application, the structure of claim 1 provides a clear advantage over that of Spencer. More specifically, the second fold-to-bend portion 27 has a hole 31, and the flange portion 33 inserted into the clearance between the first fold-to bend portion 25 and the second fold-to-bend portion 27 has a projection 35. Thus, during manufacturing and assembly, as best seen in Figures 3-4, it is easy to confirm the position of the locking projection 35 relative to the locking hole 31 prior to bending the second fold-to-bend portion 27 because the locking projection 35 is visible to a user through the locking hole 31. Thus, coupling failure due to displacement of the locking hole 31 and the locking projection 35 is prevented, and a stronger and more reliable coupling is expected.

Moreover, the instant invention is not obvious in view of Spencer as a mere reversal of parts. Specifically, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the hole in the second fold-to-bend portion, and the locking projection on the flange portion. For example, there is absolutely nothing in Spencer, nor in any of the other cited prior art, demonstrating that one of skill in the art would modify the described crimping connection. Furthermore, Spencer was patented over twenty years ago (September 2, 1986), and since that time it was unknown to incorporate the hole in the second fold-to-bend portion, and the locking projection on the flange portion, to provide greater ease in manufacturing and a stronger and more reliable coupling. Accordingly, the instant application provides a solution to this long felt but unsatisfied need. Indeed, it was the instant applicants who first recognized the advantage of making the modification.

Therefore, Spencer's structures are different from the claimed structure.

Moreover, Spencer does not clearly disclose or render foreseeable all of the limitations of claim 1, as is required by law to support a rejection under U.S.C. 103(a). Notably, Spencer does not disclose, teach, or suggest "a second fold-to-bend portion has a locking hole and a flange portion has a locking projection penetrate through the locking hole." Accordingly, it is respectfully submitted that claim 1 is now in condition for allowance. Withdrawal of the rejection is respectfully requested.

Claims 3 and 8-12 depend directly or indirectly on claim 1, and thus are patentable for at least the same reasons as the parent claim.

Regarding claim 8, the Examiner's rejection is respectfully traversed for at the following additional reasons. As admitted by the Examiner, Spencer does not disclose, teach, or suggest that the locking hole be made in the shape of a long hole. More specifically, the locking holes 31 are made in the shape of long holes which act as dowel holes, which provides a dimensional error allowance in the sheet metal drawing manufacturing process. As such, each projection 35 can individually match up with each locking hole 31, even accounting for the manufacturing tolerances of each hole/projection pair. Thus, accurate positioning can be maintained, and a stronger and more reliable coupling is expected. See paragraphs [0036] and [0038] of the instant application. Moreover, as stated above, since Spencer (twenty years ago) it has been unknown to incorporate the locking holes as long, dowel holes. Accordingly, Spencer does not clearly disclose or render foreseeable all of the limitations of claim 8, as is required by law to support a rejection under U.S.C. 103(a). It is respectfully submitted that claim 8 is now in condition for allowance. Withdrawal of the rejection is respectfully requested.

Regarding claim 9, the Examiner's rejection is respectfully traversed for at least the following additional reasons. Spencer does not disclose, teach, or suggest "wherein the locking projection is spread in the locking hole by a pressure and inner peripheral face of the locking hole and the locking projection are brought into face contact with each other to prevent from being drawn out." Instead, Spencer merely discloses that a plurality of dimples 106b are formed to be captured in the spaced openings 104b of the flanges 96b, 98b. Indeed, as shown in Figure 9, the dimple 106b has a tapered geometry and is smaller than the opening 104b, such that the side surfaces o the dimple 106b are not in contact with the sides of the opening 104b.

In distinction, when the first fold-to-bend portion 25, the flange portion 33, and the second fold-to-bend portion 27 of the instant application are brought in to close contact with each other and bonded together, the locking projections 35 of the flange portion 33 are spread in the locking holes 31 by a pressure. The inner peripheral faces of the locking holes 31 and the locking projections 35 are thus brought into face contact with each other to prevent from being drawn out. Moreover, by bringing the locking projection 35 into face contact with the inner peripheral face of the locking hole 31 by calking, electrical conduction can firmly be ensured between the flange portion 33 and the second fold-to-bend portion 27. As previously discussed, such electrical conduction is important to inhibit or prevent microwave leakage. Accordingly, Spencer does not clearly disclose or render foreseeable all of the limitations of claim 9, as is required by law to support a rejection under U.S.C. 103(a). It is respectfully submitted that claim 9 is now in condition for allowance. Withdrawal of the rejection is respectfully requested.

Claims 4-5 are rejected under 35 U.S.C. 103(a) over Spencer in view of Enami

(U.S. Patent No. 4,563,559). For at least the following reasons, the Examiner's rejection is respectfully traversed. The asserted combination of Spencer and Enami does not teach or suggest all of the limitation of claims 4-5.

As mentioned above, Spencer does not teach or suggest each and every limitation as required in claim 1, on which claims 4 and 5 directly or indirectly depend. In particular, as mentioned above, Spencer does not teach or suggest that a second fold-to-bend portion has a locking hole and a flange portion has a locking projection penetrate through the locking hole as recited in claim 1.

Enami teaches a joint construction with a front end of a second locking element 321 of a rear panel 308 is formed with a projection 321A, for example, by punching, and the projection 321A penetrate into the first locking element 332 (column 12, lines 18-24 and Fig. 36 of Enami). However Enami does not teach or suggest that a second fold-to-bend portion has a locking hole and a flange portion has a locking projection penetrate through the locking hole as recited in claim 1. Therefore, Enami fails to make up for the aforementioned Spencer's deficiencies. Thus, the asserted combination of Spencer and Enami, does not teach or suggest all of the limitations of claim 1, on which claims 4 and 5 directly or indirectly depend.

Moreover, Enami does not teach or suggest that insulating films are formed on a surface of the front plate on a side opposed to a side of being connected with an inner main body and an outer side surface of the inner main body. In Enami, as shown in Fig. 45, a paint layer 1605 is positioned on all of the front surface of a front panel 605 and a paint layer 1609 is positioned on an inner surface of the top panel 609. Therefore, Enami's painted layer 1605 on the front surface continues all the way to the connected

side with the top panel 609. To the contrary, in claims 4 and 5 of the instant application, insulating films are formed on a surface of the front plate on a side opposed to a side of being connected with the inner main body and an outer side surface of the inner main body. In other words, in claims 4 and 5, the insulating film on the front plate and the insulating film on the inner main body are not contacted each other. Consequently, the asserted combination of Spencer and Enami does not render claims 4 and 5 obvious.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NGB-36548.

Respectfully submitted,

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Date: November 29, 2007